Department of Commerce
U.S. Patent and Trademark Office

Office of the Chief Information Officer
Office of Infrastructure Engineering
and Operations
Infrastructure Services
Server and Storage Services Branch

Storage Infrastructure Managed Services
Request for Information PROC1300153

March 27, 2013

Table of Contents

Interested firms should respond no later than 11:00 AM, Contract Specialist Local time on Wednesday, April 10, 2013. All responses shall be submitted via email to Velvette Clayton at Velvette.clayton@uspto.gov and must include RFI number PROC1300153. Telephone calls requesting a solicitation will not be accepted or acknowledged. Responses to this RFI are voluntary and their source shall be treated as confidential. Participation in this effort is strictly voluntary. All costs associated with responding to this RFI will be solely at the interested respondent's expense. The objective of this RFI is to assess vendor capabilities and interest. Review of the responses to the RFI will focus on the offeror's technical capability to provide a quality solution, corporate experience/past performance for same or similar activity with commercial activities or government agencies, and responsiveness to the RFI. Proprietary information submitted in response to this RFI will be protected from unauthorized disclosure as required by the Federal Acquisition Regulation (FAR).

Introduction

The U.S. Patent and Trademark Office (USPTO), Office of the Chief Information Officer, Office of Infrastructure Engineering and Operations (OIEO) provides day-to-day operational support for the USPTO automated information systems. The Office maintains the USPTO data center facilities, production hardware, and telecommunications infrastructure. The Office leads the definition and evolution of the architecture for the USPTO-wide IT infrastructure, ensuring the proper development of that infrastructure, enforcing controls for new systems and applications, implementing necessary upgrades, and integrating applicable new technology. Principal focus areas include controlling the migration to an established system architecture, developing common infrastructure components, establishing and enforcing adequate security measures, upgrading the performance and reliability of infrastructure components, selecting IT and electronic commerce standards, leveraging Internet technologies to support USPTO business functions, establishing remote access capabilities, providing pre-production acceptance testing, and performing capacity planning and performance management of the USPTO's computer resources. Additionally, the office has primary responsibility for the Federal Enterprise Architecture activities for the Agency and in that role serves as the documenting and governing body for all architectural activities accomplished throughout the OCIO.

Under OIEO, the Server and Storage Services Branch (SSSB) currently manages over 4.9 Petabytes (PB) of *"raw"* storage including Production, Lab and Data Bunkering with only 2.9 PB allocated; the difference is currently unused or in-transition storage. The storage infrastructure is made up of EMC and NetApp storage hardware and software as well as Cisco Storage Area Network (SAN) software and switches. USPTO is also in the process of implementing tools to support performance analysis and capacity of its storage infrastructure; including, Virtual Instruments and On Command Insight. USPTO has the following service classes, SLA metrics, application types and Terabytes (TB) of raw and usable storage:

Table 1: USPTO Service Class Specification

Service Class Specification	Service class: Platinum	Service class: Gold	Service class: Silver	Service class: Bronze / Archive
Performance throughput per port (IOPS)	5,000+	Up to 5,000	Up to 3,500	Up to 1,500
Response Time (ms)	< 8ms	7-14ms	12-30ms	30-50ms
Maximum unplanned downtime per year (mins)	< 5.35 mins/ 99.999%	< 52.32 mins/ 99.99%	< 52.32 mins/ 99.99%	< 526 min/ 99.9%
Application Data Group	▪ Application Processing (Active) ▪ Text Search OLTP Critical	▪ Application Processing (Semi-Active) ▪ OLTP –med ▪ Buisness Intelligence ▪ E-Mail	▪ Application Processing (Dormant) ▪ Data warehouse ▪ Misc. production, Test & Development	▪ Archiving

Service Class Specification	Service class: Platinum	Service class: Gold	Service class: Silver	Service class: Bronze / Archive
Physical Raw Capacity TB (Allocated)	164.47	419.78	2,268.48	0
Physical Usable Capacity TB (Allocated)	99.91	314.44	1,763.62	0

*Additional detail on USPTO's current storage infrastructure is provided in *Attachment A*.

There are currently four storage arrays that are close to the end of service life (as of March 2014) and support critical applications. The arrays (four EMC Clariion CX3-80s) have 387.23 TB of physical raw capacity. In addition, USPTO is in the process of implementing several next generation or "NextGen" systems; including, Patent End to End, Trademark NextGen and Fee Processing NextGen. These systems all have new storage requirements that need to be satisfied. Finally, the information stored in the Lab environment is the lowest priority for refresh and can leverage the current infrastructure that is replaced by the vendor's managed service infrastructure. Eventually, the goal is replace all environments with the vendor's managed infrastructure.

1 Purpose

USPTO is seeking information to support decision-making in regards to moving its storage infrastructure to a managed service model. The objectives and scope of the Storage Infrastructure Managed Services (SIMS) program are provided below. In addition, the USPTO is seeking information on similar successful engagements (commercial or public sector); approaches that afford a seamless transition to managed services; service level agreements (SLAs) measurement, incentives and disincentives; and estimated costs over a seven (7) year timeframe.

This notice is issued solely for information and planning purposes. It is not a solicitation and does not constitute a request for quotations or proposal. The cost information provided does not constitute a quote and will only be used for research purposes. Vendors should mark all confidential information and/or proprietary in the response as applicable. Information provided by vendors will only be shared with USPTO employees and contractors with signed confidentiality agreements involved with market research.

2 Objectives

The SIMS objectives are as follows:

- Reduce storage infrastructure outages and downtime (and the related downtime costs)
- Have one accountable entity responsible for the ownership and management of the storage infrastructure and its operation
- Establish monitoring and audit capabilities of the SIMS vendor's performance
- Provide detailed cost "show-back" reporting to the USPTO business lines
- Realize cost savings/avoidance through storage infrastructure optimization

3 Scope

3.1 In Scope

The SIMS in-scope items include:

- Storage hardware/software, SAN hardware/software, warrantees, maintenance, operations
- Technical Refresh – planning, design, purchase, warrantees, maintenance, installation and migration
- Data bunkering – nightly copy of existing production is stored off-site in Boyers, PA for disaster recovery (may be discontinued with future Disaster Recovery capability)
- Future Disaster Recovery – data presentation at primary and alternate data centers in Alexandria, VA and Boyers, PA, respectively
- Meet or exceed performance targets – must meet SLAs for different service classes (Platinum, Gold, Silver and Bronze) **see Table 1 for service class performance metrics and thresholds*

3.2 Out of Scope

The SIMS out of scope items include:

- Network circuits
- Backup

3.3 Conditions

- USPTO will continue to manage the existing storage infrastructure until it is eventually replaced by the vendor.
- The vendor will buy, implement, migrate, manage and own all new storage equipment.
- Vendor will meet SLAs on all infrastructure managed by them.
- All equipment will be located in the two USPTO Headquarter data centers in Alexandria, VA and the data center in Boyers, PA. No off-site or cloud-based storage solutions will be considered.

3.4 High Level Approach

The USPTO is committed to achieving its objectives and attaining the benefits of SIMS as quickly as possible. USPTO looks to the vendor to design an appropriate implementation and migration path that mitigates risk to USPTO and its customers. The following high level SIMS implementation approach is suggested, but USPTO is open to alternative approaches that offer the best value to the government.

- **Year 1 – 2:** Implement new storage infrastructure to support USPTO Patent End to End and Trademark Next Generation systems implementations and to replace critical end of life storage infrastructure.

- **Year 3 – 4:** Continue to refresh production infrastructure until it is 100% owned and managed by the vendor. USPTO will repurpose retired Production infrastructure in the Lab environment.

- **Year 5 – 7:** Replace all storage infrastructure with vendor managed storage.

4 Information Request

USPTO is conducting market research to arrive at the most suitable approach for meeting the objectives and scope described in Sections 3 and 4 above. USPTO invites vendors to assist with this market research by providing responses to each of the subsections below. Please adhere to the page limits and, where applicable, the table formats for responses.

4.1 Brief Corporate Information

Provide no more than a one page introduction of your company, including country of incorporation, socio-economic status, DUNS Number, annual revenue, contract vehicles, number of Federal clients, etc.

4.2 Question 1: Experience Implementing SIMS

List the customers where your organization has played a role in implementing storage infrastructure managed services in the last 5 years. Provide all of the following information for each customer:

- Your organization's start and end dates on the project
- Whether your organization was the prime contractor or subcontractor, and if a subcontractor, the name of the prime contractor
- Storage size in TB when the contract started and size in TB when it ended
- Ownership model – fully client-owned, fully vendor-owned, partial
- The type of the storage and/or SAN hardware and software used (e.g., name, model, size, etc.)
- The amount per year paid by the client and terms and conditions (e.g., firm-fixed price, time and materials, paid on delivery, unit cost, usage, etc.)
- The areas your organization played a role in and the nature of that role.

Provide information for no more than five customers. Please be concise, limiting your responses to work done in the last five years.

4.3 Question 2: Information on Approach

Please provide information on the approach you would take to implement SIMS as described in this information request. Please include critical assumptions, risks, lessons learned, etc. In particular, please provide your approach to the following areas.

- Program and service management

- Discovery and knowledge transfer
- Planning and migration of new infrastructure
- Operation and maintenance of new storage infrastructure in USPTO data centers
- Optimization of the new storage infrastructure
- Planning, design and architecture of future requirements (increases or decreases in storage)
- Continuity of operations covering file level restoration of data from Boyers, PA to Alexandria
- Transition out

Please be concise and limit your response to this question to three pages.

4.4 Question 3: Information on SLAs

USPTO's service class specification is provided in Table 1 above and has three SLA metrics. Leveraging your previous experience and best practices, please provide:

- Recommended SLA calculation formula, timing/frequency (such as per minute)
- Incentive/disincentives (including the dollar value and whether there is a maximum or minimum dollar amount)
- Timing/frequency of the incentive/disincentive assessment (such as per month or per year). Indicate if the incentive/disincentive assessment zeroes out the acceptable quality level (AQL) or if the AQL is cumulative over a period of time (such as a year).
- Any recommended SLAs not currently part of USPTO's service class specification. Particularly any SLAs that promote storage optimization and energy savings.

Please use the table below and add additional rows as needed.

Table 2: Recommended SLA calculation and incentive/disincentive information

SLA Measure	Acceptable Quality Levels	Calculation Method (incl. all inputs)	Calculation Timing/ Frequency	Incentive/ Disincentive (value/max/min)	I/D Assessment Timing/ Frequency
Performance through put per port (IOPS)	**0 - 5,000+ 1 - Up to 5,000 2 - Up to 3,500 3 - Up to 1,500**				
Response Time (ms)	**0 - < 8ms 1 - 7-14ms 2 - 12-30ms 3 - 30-50ms**				
Maximum unplanned down-	**0 - < 5.35 mins/ 99.999% 1 - < 52.32 mins/ 99.99% 2 - < 52.32**				

SLA Measure	Acceptable Quality Levels	Calculation Method (incl. all inputs)	Calculation Timing/ Frequency	Incentive/ Disincentive (value/max/min)	I/D Assessment Timing/ Frequency
time per year (mins)	**mins/ 99.99% 3 - < 526 min/ 99.9%**				
<Other Recom-om-mended Measures>					

4.5 Question 3: Information on Cost

Please provide information on SIMS cost components for at least the next seven (7) years (FY 14 – FY20). Please include the cost method or model (e.g., firm fixed price, hourly rate, mixture of both, usage, unit cost, etc.), basis of estimate, critical assumptions, risks, lessons learned, etc. In particular, please provide your 7 year cost estimate to account for the following areas.

- Program and service management
- Discovery and knowledge transfer
- Planning, design, and engineering
- Purchasing and migrating new storage infrastructure
- New equipment operations and maintenance
- Performance, property and security management
- Incremental cost of storage in excess of amounts provided in Table 1
- Transition out

If your cost model involves use of a flat rate cost per measure of usage, please provide a break-down of the hardware, software and service elements included in the flat rate.

Please use a table, if applicable, to provide cost information using the categories provided above on an annual basis.

In addition, please describe, in no more than one page, your means of providing up-front funds to cover capital costs of new equipment purchases, and describe the means of providing funds (e.g., insurance and levels) to cover SLA disincentives.

4.6 Question 4: Additional Information on Procurement Strategy

Given the information in this document about USPTO's SIMS objectives and scope, provide any suggestions you might have on a procurement strategy. Please be concise and limit your response to this question to two pages. At a minimum, provide comments on the following information:

- The use of Performance-Based Contracting
- The use of existing schedules versus full and open
- The use of a Blanket Purchase Agreement

5 Attachment A

See Attachment A: USPTO Storage Capacity Details 3 26 2013.xls